

Appl. No. 10/017,420  
Amdt. dated January 22, 2004  
Reply to Office action of November 17, 2003

**Remarks/Arguments**

The invention claimed in the present application is a polyester bottle comprised of a polyester polymer that contains from 0.001 wt. % to 0.1 wt. % of barium sulfate having an average particle size of from about 0.1 to about 2.0 microns. Surprisingly, it has been found that bottles prepared from this composition have a lower bottle-to-bottle friction compared to bottles without the barium sulfate additive, while being characterized by an absence of visible haze that is normally associated with the introduction of particulate additives in these amounts and sizes into polyester polymers used to produce bottles.

The claims have been amended to better clarify the distinctions of applicant's invention over the prior art and to address the other issues raised by the Examiner. Specifically, Claim 7 has been amended to specify that the barium sulfate additive is present in an amount of from 0.001 wt. % to 0.1 wt. %. This amendment removes the objection to claims 10-12, and further clarifies the parameters of the invention that provide applicant's unexpected results.

Claims 7, 8 and 10-13 stand rejected as under 35 U.S.C. 102(b) as anticipated by Hepp. Since the bottles disclosed by Hepp do not contain BaSO<sub>4</sub>, the rejection is apparently made because of the Examiner's position that the wording of up to 0.1 % wt. barium sulfate in claim 7, as previously presented, encompasses bottles with no barium

sulfate. While the applicant does not agree with this interpretation, the issue is moot in view of the current amendment. Since Claim 7 now requires the inclusion of at least 0.001 wt. % barium sulfate, the claim is clearly not anticipated by Hepp.

Claims 7, 8, 10-13 and 21-24 stand rejected under 35 U.S.C. 102(e) as anticipated by Jalan. Reconsideration and withdrawal of the rejection, particularly in view of the amendment, is respectfully respected. The scope of applicant's claims are not commensurate in scope with the disclosure of the Jalan patent. Instead, certain elements of applicant's claims are encompassed by, or overlap elements of, the Jalan disclosure. The following table is a comparison of these elements:

	Present Invention	Jalan
Additive	Barium Sulfate	Pref. fumed silicon dioxide; other micronized additives barium sulfate, calcium carbonate, titanium dioxide or any other inorganic/organic solid of a particle size smaller than the wavelength of light for transparent end products such as bottles.
Additive Amount	0.001 wt. % to 0.1 wt. % Pref. 0.005 wt.% to 0.05 wt. % i.e. 10-1000 ppm, pref. 50-500 ppm	1-5000 ppm; pref. 10-1000 ppm; more pref. 10-500 ppm
Particle Size	0.1 to 2.0 microns Pref. 0.2 to 1.0 micron	0.0001 to <0.8 micron; pref. 0.001 to 0.8 micron; more pref. 0.01 to <0.8 micron

Therefore, as shown by the table, applicant's additive is one single additive among every inorganic or organic solid on earth meeting the particle size requirement; the amount of applicant's additive is encompassed within the Jalan range; and the particle

size range of applicant's additive overlaps the Jalan range. Accordingly, the appropriate ground of rejection is that there is a *prime facie* showing of obviousness under 35 U.S.C. 103, and not anticipation under 35 U.S.C. 102(b). See the following excerpts from the recent decision by the Federal Circuit in *In re Peterson*, 315 F.3d 1325, 65 USPQ2d 1379 (Fed. Cir. 2003):

"A *prima facie* case of obviousness typically exists when the ranges of a claimed composition overlap the ranges disclosed in the prior art. E.g., *In re Geisler*, 116 F.3d 1465, 1469, 43 USPQ2d 1362, 1365 (Fed. Cir. 1997); *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936-37 (CCPA 1976); *In re Malagari*, 499 F.2d 1297, 1303, 182 USPQ 549, 553 (CCPA 1974). .... Selecting a narrow range from within a somewhat broader range disclosed in a prior art reference is no less obvious than identifying a range that simply overlaps a disclosed range. ... That is not to say that the claimed composition having a narrower range is unpatentable. Rather, the existence of overlapping or encompassing ranges shifts the burden to the applicant to show that his invention would not have been obvious, as we discuss below. ... In general, an applicant may overcome a *prima facie* case of obviousness by establishing "that the [claimed] range is critical, generally by showing that the claimed range achieves unexpected results relative to the prior art range." *In re Geisler*, 116 F.3d at 1469-70, 43 USPQ2d at 1365 (alteration in original) (quoting *In re Woodruff*, 919 F.2d at 1578, 16 USPQ2d at 1936). That same standard applies when, as here, the applicant seeks to optimize certain variables by selecting narrow ranges from broader ranges disclosed in the prior art. See *In re Geisler*, 116 F.3d at 1470, 43 USPQ2d at 1365 ("Only if the 'results of optimizing a variable' are 'unexpectedly good' can a patent be obtained for the claimed critical range." (quoting *In re Antoine*, 559 F.2d 618, 620, 195 USPQ 6, 8 (CCPA 1977))); *In re Wertheim*, 541 F.2d 257, 267, 191 USPQ 90, 100 (CCPA 1976) (recognizing that "ranges which overlap or lie inside ranges disclosed by the prior art may be patentable if the applicant can show criticality in the claimed range by evidence of unexpected results")."

Applicant respectfully submits that a showing of unexpected results has been shown by the bottles as specifically claimed. Specifically, applicant has unexpectedly found that bottles of the claimed compositions can include the specific compound, barium

sulfate, in the specifically defined amounts and particle sizes to achieve a reduction in friction while still achieving a bottle that is characterized by the absence of visible haze.

Jalan is directed to the preparation of clear bottles. However, Jalan at no time expresses any interest in the reduction of bottle friction, or indicates that a reduction in friction is achievable with any of the numerous compounds disclosed. It should be noted that the only reference to friction reduction is regarding an earlier patent disclosing the use of amorphous silicon dioxide, provided by Jalan as a prior art description of the use of silicon dioxide in distinction of the use of Jalan's preferred fumed silicon dioxide. In fact, the same patent, U.S. 5,830,544 to Kerscher et al., is cited on Page 1 of applicant's specification.

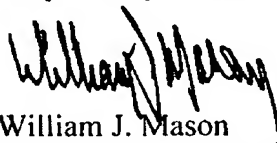
The criticality of applicant's ranges are shown, for example, by statements in applicant's specification that "Surprisingly, it has been found that one of the additives, barium sulfate, can be used to reduce the surface friction of polyester bottles without adversely affecting the bottle clarity, if the barium sulfate has an average particle size within the range disclosed herein, and if the barium sulfate is used in the amounts described." P. 3, ll. 6-10. "In selecting the appropriate size and quantity of BaSO<sub>4</sub>, an average particle size of less than 0.1 micron should be avoided, since it has been found that particle sizes below 0.1 micron have a significant nucleation effect in the polyester, resulting in an increased PET crystallization rate, and likelihood of haze." P. 6, ll. 11-14. "The criteria for all compositions are to produce bottles that exhibit reduced bottle-to-bottle friction, while being characterized by an absence of visible haze or cloudiness. P. 6,

II. 18-20. (emphasis added)

The rejections of claims 13, 14 and 25-30 over Jalan alone or in combination with Beck et al. are similarly distinguishable. The issue is not whether it would be obvious to make a 2-liter bottle, or a bottle with a defined wall thickness, the issue is whether it would have been obvious to select applicant's specifically defined parameter from among the numerous alternatives of Jalan to achieve a result not contemplated by Jalan. It is respectfully submitted that there is no disclosure in the cited references that would lead one to applicant's particular combination or suggest the unexpected results achieved.

For the forgoing reasons, and in view of the amendments to the claims, it is believed that this application now defines a patentably distinguishable invention and is accordingly in condition for allowance. Such action is respectfully solicited.

Respectfully submitted,



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File No. 5540-002

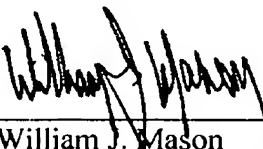
**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Honorable Director of Patents and Trademarks  
Alexandria, VA 22313  
Sir:

**CERTIFICATE OF TRANSMISSION**

Date of Deposit: January 22, 2004

I hereby certify that this paper, which is an Amendment for the POLYESTER BOTTLES WITH REDUCED BOTTLE-TO-BOTTLE FRICTION Patent Application S/N 10/017,420 is being sent via facsimile 703-872-9306 to the United States Patent and Trademark Office on the date indicated above.

  
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